

Application No. 10/050,711

Supplemental Amendment After Final Action dated May 21, 2004

Reply to Advisory Action of April 13, 2004

AMENDMENT TO THE CLAIMS:

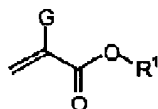
Please replace all prior claim listings with that which appears below, in which Claims 2-5, 8-11, 16-17, 19-20 and 23 have been amended, and new Claims 26-36 have been added to read as follows:

1. (Cancelled).

2. (Currently Amended) The ~~composition~~ method of Claim ~~±~~ 20, wherein upon curing, the resultant cured composition is substantially free of the first color.

3. (Currently Amended) The ~~composition~~ method of Claim ~~±~~ 20, wherein said (meth)acrylate component comprises one or more members selected from the group consisting of

a monomer represented by the formula:



wherein G is hydrogen, halogen, or an alkyl having from 1 to 4 carbon atoms, R¹ has from 1 to 16 carbon atoms and is an alkyl, cycloalkyl, alkenyl, cycloalkenyl, alkaryl, aralkyl, or aryl group, optionally substituted or interrupted with silane, silicon, oxygen, halogen, carbonyl, hydroxyl, ester, carboxylic acid, urea, urethane, carbamate, amine, amide, sulfur, sulfonate, or sulfone;

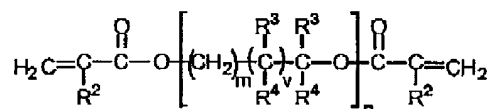
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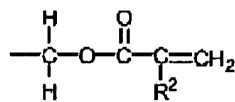
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a di- or tri- (meth)acrylate comprising polyethylene glycol di(meth)acrylates, bisphenol-A di(meth)acrylates, tetrahydrofurane di(meth)acrylates, hexanediol di(meth)acrylate, trimethylol propane tri(meth)acrylate, or combinations thereof; and

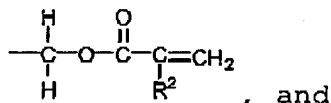
an acrylate ester represented by the formula:



wherein R^2 is hydrogen, halogen, or an alkyl having about 1 to about 4 carbon atoms, R^3 is hydrogen, an alkyl having about 1 to about 4 carbon atoms, hydroxyalkyl having about 1 to about 4 carbon atoms or



R^4 is hydrogen, hydroxy or



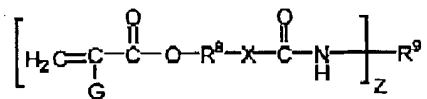
m is 1 to 8, n is 1 to 20, and v is 0 or 1.

4. (Currently Amended) The ~~composition~~ method of Claim ~~±~~ 20, wherein said (meth)acrylate component comprises urethane acrylates or ureide acrylates represented by the formula:

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wherein

G is hydrogen, halogen, or an alkyl having from 1 to 4

carbon atoms;

R⁸ denotes a divalent aliphatic, cycloaliphatic, aromatic, or araliphatic group, bound through a carbon atom or carbon atoms thereof indicated at the -O- atom and -X- atom or group;

X is -O-, -NH-, or -N(alkyl)-, in which the alkyl radical has from 1 to 8 carbon atoms;

z is 2 to 6; and

R⁹ is a z-valent cycloaliphatic, aromatic, or araliphatic group bound through a carbon atom or carbon atoms thereof to the one or more NH groups.

5. (Currently Amended) The ~~composition~~ method of Claim ~~4~~ 20, wherein said (meth)acrylate component includes (meth)acrylate monomers selected from the group consisting of polyethylene glycol di(meth)acrylates, bisphenol-A di(meth)acrylates, tetrahydrofuran (meth)acrylates and di(meth)acrylates, citronellyl acrylate and citronellyl methacrylate, hydroxypropyl (meth)acrylate, hexanediol

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di(meth)acrylate, trimethylol propane tri(meth)acrylate, tetrahydrodicyclopentadienyl (meth)acrylate, ethoxylated trimethylol propane triacrylate, triethylene glycol acrylate, triethylene glycol methacrylate, and combinations thereof.

Claims 6 and 7. (Cancelled).

8. (Currently Amended) The ~~composition~~ method of Claim ~~±~~ 20, wherein said dye is present in an amount of about 50 ppm to about 1000 ppm based on the amount of said (meth)acrylate component.

9. (Currently Amended) The ~~composition~~ method of Claim ~~±~~ 20, wherein said dye is present in an amount of about 100 to about 200 ppm based on the amount of said (meth)acrylate component.

10. (Currently Amended) The ~~composition~~ method of Claim ~~±~~ 20, wherein said dye comprises tetraiodofluorescein.

11. (Currently Amended) The ~~composition~~ method of Claim ~~±~~ 20, further comprising a member selected from the group consisting of stabilizers, accelerators, fillers, opacifiers, thickeners, viscosity modifiers, adhesion promoters, inhibitors, thixotrophy conferring agents, tougheners, anti-oxidizing agents, anti-reducing agents, and combinations thereof.

Claims 12-15. (Cancelled).

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16. (Currently Amended) The ~~composition~~ method of Claim ~~1~~ 20, wherein prior to the step of exposing the first and second articles to cure conditions ~~curing the (meth)acrylate component~~, the (meth)acrylate component has a first color which is fluorescent.

17. (Currently Amended) The method of Claim ~~15~~ 16, wherein after the step of exposing the first and second articles to cure conditions ~~curing the (meth)acrylate component~~, the cured composition is substantially free of the first color.

18. (Cancelled).

19. (Currently Amended) The method of Claim ~~15~~ 16, wherein the step of curing comprises photocuring.

20. (Currently Amended) A method of detecting substantially full cure of an adhesive comprising the steps of
providing a first article and a second article;
providing, on a surface of the first article, ~~the~~ a
(meth)acrylate composition ~~of Claim 1~~ comprising:

a (meth)acrylate component; and
a dye substantially dissolved in said (meth)acrylate component which imparts a first color to said
(meth)acrylate component, wherein upon curing, a resultant
cured composition has a second color, and wherein said dye

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comprises xanthene dyes, and optionally, anthraquinone dyes, wherein said xanthene dye is selected from the group consisting of fluorescein, dibromofluorescein, diiodofluorescein, tetrabromofluorescein, tetraiodofluorescein, tetrabromotetrachlorofluorescein and combinations thereof;

contacting a surface of the second article to the surface of the first article having the (meth)acrylate composition thereon; and

exposing the first and second articles to cure conditions.

21. (Cancelled)

22. (Original) The method of Claim 20, further including the step of detecting the absence of the first color after exposing the first and second articles to cure conditions.

23. (Currently Amended) A method of assembling and inspecting a series of articles having an adhesive bond line comprising the steps of

adhering two or more parts of an article together with ~~the~~ a (meth)acrylate composition of Claim 1 comprising:

a (meth)acrylate component; and

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a dye substantially dissolved in said (meth)acrylate component which imparts a first color to said (meth)acrylate component, wherein upon curing, a resultant cured composition has a second color, and wherein said dye comprises xanthene dyes, and optionally, anthraquinone dyes, wherein said xanthene dye is selected from the group consisting of fluorescein, dibromofluorescein, diiodofluorescein, tetrabromofluorescein, tetraiodofluorescein, tetrabromotetrachlorofluorescein and combinations thereof, wherein an adhesive bond line is formed between the parts of the article; and

exposing the article to cure conditions.

24. (Previously Presented) The method of Claim 23, wherein in the step of adhering two or more parts of an article together with the (meth)acrylate composition, the (meth)acrylate composition has a first color.

25. (Previously Presented) The method of Claim 24, further including the step of detecting the absence of the first color after exposing the article to cure conditions.

26. (New) The method of Claim 23, wherein upon curing, the resultant cured composition is substantially free of the first color.

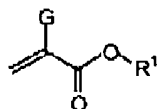
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27. (New) The method of Claim 23, wherein said (meth)acrylate component comprises one or more members selected from the group consisting of

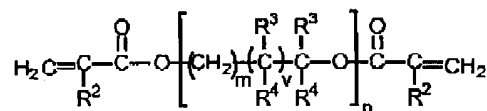
a monomer represented by the formula:



wherein G is hydrogen, halogen, or an alkyl having from 1 to 4 carbon atoms, R¹ has from 1 to 16 carbon atoms and is an alkyl, cycloalkyl, alkenyl, cycloalkenyl, alkaryl, aralkyl, or aryl group, optionally substituted or interrupted with silane, silicon, oxygen, halogen, carbonyl, hydroxyl, ester, carboxylic acid, urea, urethane, carbamate, amine, amide, sulfur, sulfonate, or sulfone;

a di- or tri- (meth)acrylate comprising polyethylene glycol di(meth)acrylates, bisphenol-A di(meth)acrylates, tetrahydrofuran di(meth)acrylates, hexanediol di(meth)acrylate, trimethylol propane tri(meth)acrylate, or combinations thereof; and

an acrylate ester represented by the formula:

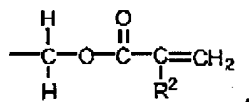


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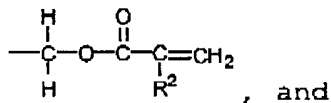
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wherein R^2 is hydrogen, halogen, or an alkyl having about 1 to about 4 carbon atoms, R^3 is hydrogen, an alkyl having about 1 to about 4 carbon atoms, hydroxyalkyl having about 1 to about 4 carbon atoms or

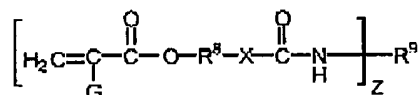


R^4 is hydrogen, hydroxy or



m is 1 to 8, n is 1 to 20, and v is 0 or 1.

28. (New) The method of Claim 23, wherein said (meth)acrylate component comprises urethane acrylates or ureide acrylates represented by the formula:



wherein

G is hydrogen, halogen, or an alkyl having from 1 to 4 carbon atoms;

R^8 denotes a divalent aliphatic, cycloaliphatic, aromatic, or araliphatic group, bound through a carbon atom or carbon atoms thereof indicated at the $-\text{O}-$ atom and $-\text{X}-$ atom or group;

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X is -O-, -NH-, or -N(alkyl)-, in which the alkyl radical has from 1 to 8 carbon atoms;

z is 2 to 6; and

R⁹ is a z-valent cycloaliphatic, aromatic, or araliphatic group bound through a carbon atom or carbon atoms thereof to the one or more NH groups.

29. (New) The method of Claim 23, wherein said (meth)acrylate component includes (meth)acrylate monomers selected from the group consisting of polyethylene glycol di(meth)acrylates, bisphenol-A di(meth)acrylates, tetrahydrofuran (meth)acrylates and di(meth)acrylates, citronellyl acrylate and citronellyl methacrylate, hydroxypropyl (meth)acrylate, hexanediol di(meth)acrylate, trimethylol propane tri(meth)acrylate, tetrahydrodicyclopentadienyl (meth)acrylate, ethoxylated trimethylol propane triacrylate, triethylene glycol acrylate, triethylene glycol methacrylate, and combinations thereof.

30. (New) The method of Claim 23, wherein said dye is present in an amount of about 50 ppm to about 1000 ppm based on the amount of said (meth)acrylate component.

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31. (New) The method of Claim 23, wherein said dye is present in an amount of about 100 to about 200 ppm based on the amount of said (meth)acrylate component.

32. (New) The method of Claim 23, wherein said dye comprises tetraiodofluorescein.

33. (New) The method of Claim 23, further comprising a member selected from the group consisting of stabilizers, accelerators, fillers, opacifiers, thickeners, viscosity modifiers, adhesion promoters, inhibitors, thixotrophy conferring agents, tougheners, anti-oxidizing agents, anti-reducing agents, and combinations thereof.

34. (New) The method of Claim 23, wherein prior to the step of exposing the first and second article to cure conditions, the (meth)acrylate component has a first color which is fluorescent.

35. (New) The method of Claim 23, wherein after the step of exposing the article to cure conditions, the cured composition is substantially free of the first color.

36. (New) The method of Claim 23, wherein the step of curing comprises photocuring.